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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,150	03/02/2004	David D. Brause	3123-552 (STL07651)	3169

7590 10/31/2008
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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1791

MAIL DATE	DELIVERY MODE
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10/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/791,150	Applicant(s) BRAUSE ET AL.	
	Examiner JEFFREY WOLLSCHLAGER	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13-35 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-35, and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed July 25, 2008 has been entered. Claims 1, 17, 29, 33, and 37 are currently amended. Claims 10-12, 36, and 40-51 have been canceled. Claims 1-9, 13-35, and 37-39 are pending and under examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, 5, 7-9, 16, 29-34, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jabbari et al. (US 5,734,528) in view of Umehara et al. (US 5,168,185) and Tanaka et al. (US 6,289,577)

Regarding claims 1, 2, 7, 8, 29, 33, and 37, Jabbari et al. teach a method of producing a disc drive actuator wherein a coil and bobbin are attached to actuator arms by an overmolding/injection molding process (Abstract). The actuator arms have apertures for better

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connecting the actuator and the coil/bobbin together. These apertures are injected with resin during the overmolding process (col. 2, lines 1-44; col. 3, lines 32-col. 4, lines 37; col. 6, lines 24-67). Jabbari et al. do not teach forming apertures and subsequently filling the apertures with an adhesive in order to increase a vibrational stiffness response of the actuator and the coil.

However, Umehara et al. teach a method of applying a layer of adhesive to the plastic overmolded actuator arm assembly in order to increase rigidity (i.e. vibrational stiffness) and to eliminate problems associated with flash (Abstract; Figures 1 and 2 (10); col. 1, line 50-col. 2, line 48; col. 3, lines 8-10) and Tanaka et al. suggest and provide evidence that in overmolding plastic material to actuator arms shrinkage of the plastic material is common and that the shrinkage of the plastic forms gaps between the arms and the resin (col.1, lines 8-20 and col. 1, line 65-col.2, line 11) (i.e. these gaps formed by shrinkage are adhesive receptacles in the combination since the adhesive of Umehara et al. would enter the gaps formed by the intrinsic/implicit shrinkage of the overmolding resin of Jabbari et al.)

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Jabbari et al. and to have filled apertures formed from the overmolding process with an adhesive to increase the vibrational stiffness response of the actuator and the coil, as suggested by Umehara et al. and Tanaka et al., for the purpose, as suggested by Umehara et al., of improving the rigidity of the actuator and reducing the problem of flash.

As to claims 4 and 30, the combination suggests the same claimed process steps and employs the same claimed materials. Accordingly, it follows that the same physical properties are present in the combined method (e.g. stiffness).

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As to claim 5, Jabbari et al. dispose the coil and actuator in a mold (col. 6, lines 24-67) and remove them after molding them. The combination suggests filling the apertures with adhesive instead of resin after the overmolding step.

As to claim 9, the combination suggests the adhesive is formed on a perimeter (Thorson: Figure 3).

As to claim 16, the combination employs the same claimed steps and the same claimed material. Accordingly, the same claimed effects (e.g. wicking) would be realized by the practice of the combined method.

As to claims 31 and 32, Jabbari et al. teach forming apertures/notches in the actuator (Abstract).

As to claims 34 and 38, the combination suggests forming a plurality of apertures/receptacles (Jabbari et al: Figure 2C; Thorson: Figure 1).

Claims 3, 6, 13-15, 35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jabbari et al. (US 5,734,528) in view of Umehara et al. (US 5,168,185) and Tanaka et al. (US 6,289,577), as applied to claims 1, 2, 4, 5, 7-9, 16, 29-34, 37 and 38 above, and further in view of Arisaka et al. (US 2003/0081355).

As to claims 3, 6, 13-15, 35 and 39, the combination teaches the method as set forth above. Jabbari et al. do not teach forming a bobbin with the overmolding material. However, Arisaka et al. teach the overmolding step comprises forming a first overmolded part, including a bobbin/reinforcement plate/internal molding that is attached to said coil by said overmolding step, wherein said coil is disposed about at least part of said bobbin (paragraphs [0033, 0035, 0041], Figure 3, element (11); Figure 7, element (15)).

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Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the teaching of Jabbari et al. and to have molded the bobbin during the overmolding step as suggested by Arisaka et al. for the purpose of forming a stronger and more uniform assembly in an art recognized equivalent manner.

Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arisaka et al. (U.S. Patent Application Publication 2003/0081355; published May 1, 2003) in view of Umehara et al. (US 5,168,185) and Tanaka et al. (US 6,289,577)

Regarding claim 17, Arisaka et al. teach a method for making an assembly comprising an actuator and a coil for a data storage device comprising the steps of: disposing a coil and an actuator in a mold; executing a first molding step comprising molding a first molded part that structurally joins said coil to said actuator wherein said first molding step is executed within said mold; executing a second molding step comprising molding a bobbin/reinforcement plate/internal molding that structurally joins said coil to said bobbin, where said coil is disposed about at least part of said bobbin, and wherein said second molding step is executed within said mold; forming at least one adhesive receptacle in at least one of said first molded part and said bobbin during at least one of said first and second molding steps; removing said actuator, said first molded part, said coil, and said bobbin from said mold as a single unit after completion of said first and second molding steps; and disposing an adhesive in said at least one adhesive receptacle after said removing step (paragraphs [0033, 0035, and 0041]). Arisaka et al. do not teach disposing an adhesive to further adjoin the bobbin to the coil or the first molded part to the actuator to increase a vibrational stiffness of said single unit.

However, Umehara et al. teach a method of applying a layer of adhesive to the plastic overmolded actuator arm assembly in order to increase rigidity (i.e. vibrational stiffness) and to

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eliminate problems associated with flash (Abstract; Figures 1 and 2 (10); col. 1, line 50-col. 2, line 48; col. 3, lines 8-10) and Tanaka et al. teach and provide evidence that in overmolding plastic material to actuator arms shrinkage of the plastic material is common and that the shrinkage of the plastic forms gaps between the arms and the resin (col.1, lines 8-20 and col. 1, line 65-col.2, line 11) (i.e. these gaps formed by shrinkage are adhesive receptacles in the combination since the adhesive of Umehara et al. would enter the gaps formed by the intrinsic shrinkage of the overmolding resin of Arisaka et al.).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Arisaka et al. and to have filled apertures formed from the overmolding process with an adhesive to increase the vibrational stiffness response of the unit, as suggested by Umehara et al. and Tanaka et al., for the purpose, as suggested by Umehara et al., of improving the rigidity of the actuator and reducing the problem of flash.

As to claims 18 and 19, the first and second molding steps of Arisaka et al. are executed simultaneously, and each comprises overmolding (paragraph [0033], Figure 3, elements (10 and 12)).

As to claim 20, the method taught by Arisaka et al. is such that said disposing step comprises increasing a stiffness of at least one of first and second interconnections wherein said interconnections are between said actuator and said coil and between said coil and said bobbin (paragraphs [0033, 0035, and 0041]).

As to claim 21, the disposing step taught by Arisaka et al. is executed without any fixtures to retain said coil in a predetermined position.

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As to claim 22, Arisaka et al. teach that said forming at least one adhesive receptacle is such that a first adhesive receptacle intersects with a joint partly defined by one of first molded part and said bobbin/internal molding/reinforcing plate (paragraphs 0033, 0035, 0039, 0041).

Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arisaka et al. (U.S. Patent Application Publication 2003/0081355) in view of Umehara et al. (US 5,168,185) and Tanaka et al. (US 6,289,577), as applied to 17-22 above, and further in view of Lin (U.S. Patent 6,867,950) and Foisy et al. (U.S. Patent 6,061,206).

As to claims 23-28, the combination teaches the method of claim 22 as set forth above. Additionally, Lin teaches a method of forming a bobbin with cleated features wherein said cleated features provide additional surface area for adhesive bonding and Foisy et al. teach a method of molding the bobbin together with the actuator and coil (col. 8, lines 29-45).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed the bobbin containing the cleated receptacles as taught by Lin in the method taught by Arisaka for the purpose, as taught by Lin of stiffening the coil assembly (Abstract). Additionally, it would have been *prima facie* obvious to directly mold the bobbin in the mold as taught by Foisy et al. for the purpose of eliminating a molding step. As such, the claims are rendered *prima facie* obvious over the combined teaching of the prior art.

Response to Arguments

Applicant's arguments filed July 25, 2008 have been fully considered, but are moot in view of the new grounds of rejection necessitated by the amendment to the claims.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./

Examiner, Art Unit 1791

October 31, 2008

/Monica A Huson/

Primary Examiner, Art Unit 1791